DRAFT
EVALUATION REPORT
OAKWOOD ATHLETIC CLUB
APPLICATION #14660
PLANT #17812

BACKGROUND

Distributed Energy Resource Group, Inc. is applying on behalf of Oakwood Athletic Club for an authority to construct and permit to operate for the following equipment:

S-1 Cogeneration 260 kW Unit: Deutz B8FM1015CG Natural Gas-Fired Rich Burn Internal Combustion Engine 380 bhp, Abated by A-1: Nonselective Catalytic Reduction System

A-1 Nonselective Catalytic Reduction System: Johnson-Mathey, Bandito Model CX8 Natural Gas TWC to Abate S-1: Cogeneration 260 kW Unit

All of the electricity and thermal energy generated by the proposed Cogeneration Unit will be used onsite.

EMISSION CALCULATIONS

Basis:

1. Emission calculations of NOx, CO and POC are based on the permit condition limits of 9 ppmvd @ 15% oxygen (equivalent to 0.15 g/bhp-hr), 56 ppmvd @15% oxygen (equivalent to 0.6 g/bhp-hr) and 25 ppmvd @15% oxygen (equivalent to 0.15 g/bhp-hr) respectively.
2. Emission calculations of PM10 and SO2 are based on emission factors extracted from EPA AP-42 Table 3.2-3.
3. Typical operating time is 24 hr/day and 365 day/yr.

	NOx	CO	POC	PM_{10}	$S0_2$
Emission Factor (g/bhp-hr)	0.15	0.6	0.15	N/A	N/A
Emission Factor (lb/mm btu)	N/A	N/A	N/A	0.02931	0.000588
Average Daily Emissions (lb/day)	3.01	12.04	3.01	1.93	0.04
Max Daily Emissions (lb/day)	3.01	12.04	3.01	1.93	0.04
Plant Cumulative Increase (ton/yr)	0.549	2.197	0.549	0.353	0.007

PLANT CUMULATIVE INCREASE

	NOx	CO	POC	PM_{10}	SO_2
Current (ton/yr)	0.00	0.00	0.00	0.00	0.00
This project (ton/yr)	0.549	2.197	0.549	0.353	0.007
New Total (ton/yr)	0.549	2.197	0.549	0.353	0.007

RISK SCREEN ANALYSIS

This application triggers health risk screening analysis per Regulation 2-5 (New Source Review of Toxic Air Contaminants) because some of the TAC emissions exceed their respective risk trigger levels stipulated in Table 2-5-1 (Toxic Air Contaminant Trigger Levels). Health risk

screening analysis was performed by Ted Hull of the Toxics Evaluation Section and documented in the attached report. It was found that the proposed source passes the analysis because the maximum cancer risk is estimated to be 1.8 in a million and the source meets the Toxics Best Available Control Technology (TBACT) by equipping with a NSCR Device.

BACT DETERMINATION

This application triggers BACT because the CO emissions of the proposed source exceed 10 lb/day. However, BACT is satisfied by equipping the proposed source with a NSCR that guarantees CO emission factor at the outlet of the NSCR to no more than 56 ppmvd @15% oxygen.

OFFSET REQUIREMENT

This application does not require offsets because the plant permitted emissions of precursor organic compounds (NMHC) and NOx pollutants are each below the 10 ton/yr limit of Regulation 2-2-302.

COMPLIANCE DETERMINATION

The proposed cogeneration unit is expected to operate in compliance with Regulation 6-303 (Ringelmann No. 2 Limitation), Regulation 6-310 (Particulate Weight Limitation, 0.15 gr/dscf), Regulation 9-1-304 Fuel Burning (<0.5% S by weight). Also, it is expected to operate in compliance with Regulations 9-8-301.1 (56 ppmv NOx @15% O_2, dry) and 9-8-301.3 (2000 ppmv CO @15% O_2, dry).

This source triggers the New Source Review rule and Toxics Review rule. The BACT and TBACT requirements of Regulations 2-2-301 and 2-5-301 are met.

Federal New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPS) requirements are not applicable.

The proposed project has been determined categorically exempt from the California Environmental Quality Act (CEQA) by the lead agency, the City of Lafayette, under Article 19, Section 15329. Letter from the City of Lafayette dated September 14 2006 is attached.

This source is located within 1,000 feet of the outer boundary of Bentley Upper School, therefore school public notice is required.

CONDITIONS ( )

1. The natural gas-fired rich burn internal combustion engine (S-1) shall be fired exclusively on natural gas. [Basis: Cumulative Increase, BACT]

2. The total usage of natural gas at S-1 shall not exceed 24.1 million standard cubic feet during any consecutive 12-month period. (Basis: Cumulative Increase, Regulation 2-5)

3. A District approved non-resettable, totalizing fuel meter for measuring natural gas consumption shall be installed at S-1 prior to any operation and maintained in good working order. [Basis: Cumulative Increase, BACT, Regulation 2-5]

4. During operation, S-1 shall always be abated by the properly operated and maintained NSCR catalysts (A-1) with air/fuel controller. [Basis: Cumulative Increase, BACT, Regulation 2-5]

5. NOx emissions from S-1, calculated as NO_2, at the outlet of A-1 shall not exceed 9 ppmvd @ 15% oxygen. [Basis: Cumulative Increase, BACT]

6. CO emissions from S-1 at the outlet of A-1 shall not exceed 56 ppmvd @15% oxygen. [Basis: Cumulative Increase and BACT]

7. POC emissions from S-1 at the outlet of A-1 shall not exceed 25 ppmvd @15% oxygen. [Basis: Cumulative Increase]

8. The owner/operator shall not allow cumulative emissions from S-1 at the outlet of A-1 to exceed the following limits during any consecutive 12-month period:

    a. 1100 lb/yr of NOX
    b. 4400 lb/yr of CO
    c. 1100 lb/yr of POC
    [Basis: Cumulative increase, Offsets]

9. In order to demonstrate compliance with Parts 5, 6, 7, and 8 the owner operator shall conduct a District approved source test on S-1 within 90 days of the start-up. These source tests shall be performed annually thereafter for S-1. The Source Test section of the District shall be contacted to obtain their prior approval of the source test procedures and shall be notified 7 days in advance of each source test. The source test report shall be submitted to the District within 45 days of the test date. [Basis: Cumulative Increase, BACT]

10. During the period of time between the annual source tests required in Part 9 for S-1, the owner/operator shall demonstrate compliance with Parts 5, 6 and 7 by measuring NOX, CO, and POC emissions quarterly using District approved portable gas analyzers. [Basis: Cumulative Increase, BACT]

11. Monthly records of natural gas consumption at S-1and quarterly measurements of NOX, CO, and POC emissions from S-1 shall be maintained in a District approved logbook. All records, including source test reports, shall be retained on site for at least two years from the date of entry, and made available for inspection by District staff upon request. These record-keeping requirements shall not replace the record-keeping requirements contained in any applicable District regulations. [Basis: Cumulative Increase, BACT]

RECOMMENDATION

I recommend that an authority to construct be issued to Oakwood Athletic Club for the following equipment subject to school public notice:

S-1 Cogeneration 260 kW Unit: Deutz B8FM1015CG Natural Gas-Fired Rich Burn Internal Combustion Engine 380 bhp, Abated by A-1: Nonselective Catalytic Reduction System

A-1 Nonselective Catalytic Reduction System: Johnson-Mathey, Bandito Model CX8 Natural Gas TWC to Abate S-1: Cogeneration 260 kW Unit

EXEMPTION

None.

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Hon-ting Man
Air Quality Engineer II
March 5, 2007